

Response to Office action 10/31/2005
Response submitted December 28, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended). A method for determining at least one critical path of an integrated circuit limiting a processing speed of the integrated circuit, the method which comprises:

- a) determining paths provided in the integrated circuit, mean path transit times of the paths, and path transit time fluctuations of the paths;
- b) ordering the paths to form a path group with the paths having substantially an identical mean path transit time and having an identical path transit time fluctuation;
- c) calculating a group figure for each path group, the group figure statistically describing the path transit time distribution of a respective path group;
- d) calculating a total figure for a totality of the paths considered, the total figure statistically describing the path transit time distribution of the totality of the paths considered; and

Response to Office action 10/31/2005
Response submitted December 28, 2005

e) determining the at least one critical path of the integrated circuit by comparing the group figures at least as great as a critical path transit time determined by taking into consideration the total figure.

Claim 2 (original). The method according to claim 1, which further comprises, in step e), predetermining a value for the total figure and determining the critical path transit time as the path transit time at which the total figure assumes the predetermined value.

Claim 3 (original). The method according to claim 1, which further comprises determining as critical paths the paths having group figures exceeding a predetermined threshold value at least as great as the critical path transit time.

Claim 4 (original). The method according to claim 2, which further comprises determining as critical paths the paths having group figures exceeding a predetermined threshold value at least as great as the critical path transit time.

Claim 5 (original). The method according to claim 1, which further comprises, after step a), discarding all the paths having the mean path transit time less than $\alpha \times T_m$, where T_m is the maximum mean path transit time determined in step a) and α is a quantity of less than 1.

Claim 6 (currently amended). The method according to claim 1, which further comprises, after step a), discarding all the paths having the mean path transit time

Response to Office action 10/31/2005
Response submitted December 28, 2005

less than $\alpha \times T_m$, where T_m is the a maximum mean path transit time determined in step a) and α is a quantity equal to approximately 0.8.

Claim 7 (currently amended). The method according to claim 1, which further comprises, after step a), discarding all the paths having the mean path transit time less than $\alpha \times T_m$, where T_m is the a maximum mean path transit time determined in step a) and α is a quantity of less than approximately 0.8.

Claim 8 (currently amended). The method according to claim 1, which further comprises:

defining the group figure by an integral over a sum of probability distributions of the path transit times of the paths of the path group considered; and

for calculating the sum of the probability distributions, forming a product of the a number of paths of the path group and the probability distribution of one path of the path group.

Claim 9 (original). The method according to claim 1, which further comprises defining the total figure by a sum of the group figures.

Claims 10 - 13 (canceled).

Response to Office action 10/31/2005
Response submitted December 28, 2005

Claim 14 (currently amended). The method according to claim 10 claim 1, which further comprises, after step a) and before step b), discarding all the paths having the mean path transit time less than $\alpha \times T_m$, where T_m is the maximum mean path transit time determined in step a) and α is a quantity of less than 1.

Claim 15 (currently amended). The method according to claim 10 claim 1, which further comprises, after step a) and before step b), discarding all the paths having the mean path transit time less than $\alpha \times T_m$, where T_m is the maximum mean path transit time determined in step a) and α is a quantity equal to approximately 0.8.

Claim 16 (currently amended). The method according to claim 10 claim 1, which further comprises, after step a) and before step b), discarding all the paths having the mean path transit time less than $\alpha \times T_m$, where T_m is the maximum mean path transit time determined in step a) and α is a quantity of less than approximately 0.8.

Claims 17 - 18 (canceled).

Claim 19 (currently amended). A method for determining at least one critical path of an integrated circuit limiting a processing speed of the integrated circuit, the method which comprises:

- a) determining paths provided in the integrated circuit, mean path transit times of the paths, and path transit time fluctuations of the paths;

Response to Office action 10/31/2005
Response submitted December 28, 2005

- b) ordering the paths to form a path group with the paths having a substantially identical mean path transit time and a substantially identical path transit time fluctuation;
- c) calculating a group figure for each path group, the group figure statistically describing the path transit time distribution of a respective path group;
- d) calculating a total figure for a totality of the paths considered, the total figure statistically describing the path transit time distribution of the totality of the paths considered; and
- e) determining the at least one critical path of the integrated circuit by comparing the group figures at least as great as a critical path transit time determined by taking into consideration the total figure.